# EXPENDITURES OF GREAT LAKES SALMON AND TROUT STAMP REVENUES, 1983-84

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Administrative Report No. 22

Bureau of Fish Management Department of Natural Resources Madison, Wisconsin December, 1984

The Great Lakes Salmon and Trout Stamp has been required since 1982 for licensed anglers who fish salmon and trout in Wisconsin's Great Lakes boundary waters. Receipts from stamps sales were designated by Wisconsin statute to supplement and enhance the existing trout and salmon rearing and stocking program for outlying Great Lakes waters. Expenditures of stamp revenues are expressly limited to the rearing, stocking, and evaluation of salmon and trout destined for the Wisconsin waters of Lakes Michigan and Superior and their tributaries, or must be related to the administration of those funds. The sale of 1982 stamps totaled 243,476 or \$733,316.45 in revenues, while the sale of 1983 stamps totaled 277,365 or \$835,357.20 in revenues.

This report summarizes expenditures of stamp revenues in fiscal years 1983 and 1984 by DNR District, project, estimated cost (allotment amount), and actual cost (expenditure amount), as organized in the expenditure plan (Krueger 1983). Included are all costs associated with travel, special services, supplies, permanent property, and limited term employee salaries. Projects were catagorized as either facility developments or program operations (activities). Permanent employee salaries and fringe benefits are charged against separate allotments within each district as employes engage in approved projects. Fringe benefit expenses for permanent and limited-term employes were \$12,212.97 in FY83 and \$54,860.28 in FY84 from \$19,700.00 and \$55,600.00 allotments. Fiscal years included are July 1, 1982 to June 30, 1983 (FY83) and July 1, 1983 to June 30, 1984 (FY84). The closing cash balance at the end of FY84 was \$765,307.95.

#### NORTHWEST DISTRICT

Permanent employee salary expenditures in the District were \$8,800.80 in FY83 (1 position) and \$18,063.97 in FY84 (1.5 positions) from \$9,000.00 and \$24,100.00 allotments; all within Lake Superior Work Unit project activities.

#### Facility Development

1. Bayfield Trout Hatchery Renovation.

This ongoing project is providing repairs to the start tank drain system, development of an egg hatching facility, development of a cold storage fish foods facility, and construction of a concrete bottom and pole building for an existing outdoor raceway. Expenditures to date total \$12,117.16 out of allotments totalling \$24,800.00, all in FY84. There were no costs associated with a \$10,000.00 allotment in FY83. This hatchery produces all of the lake trout, splake, brook trout, and rainbow trout stocked in Lake Superior.

2. Brule River Trout Hatchery Renovation and Expansion.

This project provided construction of an enclosure to hatch and rear wild brown trout (FY83) and installation of demand feeders for rearing (FY84). Expenditures were \$2,575.41 in FY83 and \$5,678.70 in FY84 out of allotments totalling \$2,575.41 and \$4,500.00, respectively. Hatchery production of wild strains of brook, brown, and rainbow trout for use in Lake Superior will ultimately be increased.

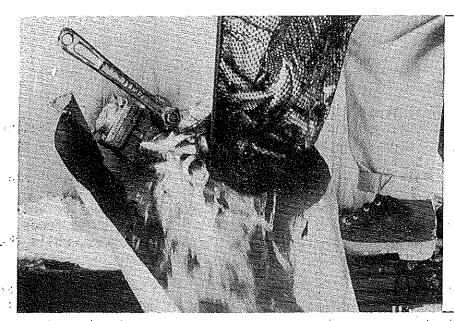


Figure 1. Maintenance activities
at the Bayfield
trout hatchery will
ensure that production of trout
for stocking in
Lake Superior
continues.

3. Osceola Trout Hatchery and Brood Stock Station Renovation.

This project provided engineering services in FY84 and will provide renovation of the hatchery water collection system in FY85. Renovation will include raising the hatchery water manifolds and replacing the water collection boxes. Expenditures for engineering services in FY84 were \$1,584.00 out of an allotment of \$17,000.00. Bids for the renovation will be let in FY85. All of the rainbow trout eggs (Shasta strain) used in the Lake Michigan stocking program are provided by this hatchery.

# Operations (Activities)

Lake Trout Egg Stocking and Assessment.

Devils Island Shoal, a historical lake trout spawning reef, was stocked with Astro-turf egg mats in FY83 at a cost of \$3,728.00 and in FY84 at a cost of \$6,326.41; allotments were \$8,790.00 and \$12,000.00, respectively. Hatching of eggs and escapement of fry from the bundles was similar for wild and domestic strain eggs, permitting use of more readily available domestic strain eggs in future years. Egg plants in October of 1983 totalled 1,170,000.

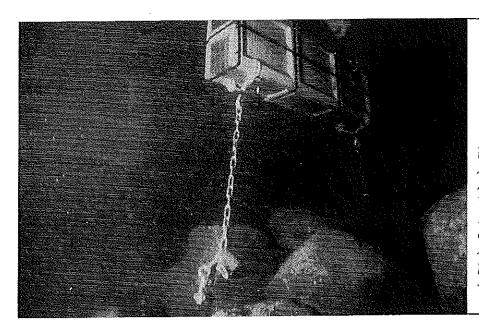


Figure 2. Lake trout eggs are stocked on Devil's Island Shoal in Lake Superior in order to re-establish spawning populations onto this spawning reef.

Stock Lake Trout Yearlings and Evaluate.

Spring assessment activities for FY84, including microtagging, morpholine imprinting, and stocking costs, were \$21,576.63 out of an allotment of \$16,000.00. Future assessments will evaluate the effect of size at stocking and imprinting on lake trout movements and survival.

3. Stocked and Native Lake Trout Spawning Assessment.

Evaluation of spawner abundance, year class mortality rates, spawning site selection by stocked lake trout, and collection of eggs for restocking and hatchery production costs in FY84 totalled \$10,466.19 out of a \$10,500.00 allotment. The egg take in 1983 provided 1,106,000 wild Gull Island Shoal strain eggs for stocking on Devils Island Shoal.

4. Lake Superior Salmonid Creel Census.

Total cost for running the annual creel census on Lake Superior and its tributary streams were \$12,600.71 in FY83 and \$17,647.33 in FY84. An additional special census on the Brule River begun in FY84 cost \$11,757.53. Respective allotments were \$18,375.00, \$35,000.00, and \$14,400.00. This program assesses sport harvest within Lake Superior that is crucial to proper management of the fishery.

5. Collection of Wild Trout Eggs for Hatchery Production.

Cost of collecting and fertilizing wild rainbow, brown; and brook trout eggs for subsequent rearing, stocking, and evaluation were \$722.15 in FY84 from an allotment of \$5,750.00.

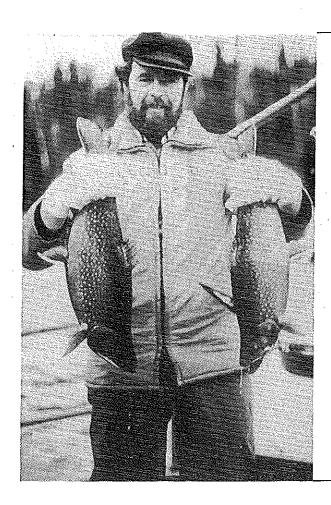


Figure 3. Lake Nipigon brook trout from Ontario provided eggs for future brood stock and subsequent re-establishment of 'coaster' brook trout in Lakes Superior and Michigan.

6. Stock Trout and Salmon and Evaluate.

Costs of stocking wild strains of brown, brook, and rainbow trout, splake, and chinook salmon, and of evaluating the impact of coho salmon on production of rainbow and brown trout in tributary streams totalled \$9,517.16 from the \$14,000.00 allotment in FY84. Preliminary results indicate that coho salmon have only a minimal effect on rainbow and brown trout production in Lake Superior tributaries.

7. Identification of Stream Trout Populations That Require Stocking.

Lake Superior tributary streams surveys completed in FY84 totalled \$12,032.27 from a \$14,400.00 allotment. Subsequent surveys and evaluations will determine stocking requirements for anadromous salmonids.

8. Bayfield Trout Hatchery Operations

Egg incubators and trays at the Bayfield trout hatchery used for Great Lakes propagation were replaced in FY84 for \$5,749.50 from an allotment of \$5,500.00.

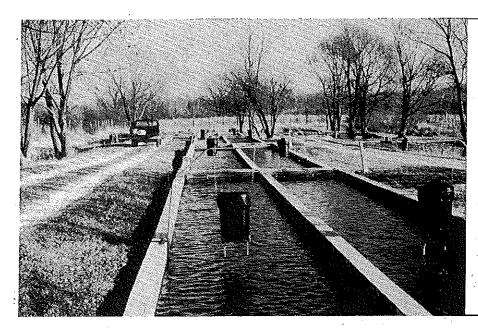


Figure 4. Developments at Kettle
Moraine Springs
salmon and trout
hatchery will
dramatically increase production
for stocking of
Lake Michigan.

#### SOUTHEAST DISTRICT

Permanent employee salary expenditures in the district were \$3,563.00 in FY83 (1 position) and \$26,288.56 in FY84 (1.5 position) from allotments of \$3,563.00 and \$15,000.00. These expenses in FY 83 were incurred exclusively at Kettle Moraine Springs Hatchery and in FY84 were divided between activities at the hatchery and in the Lake Michigan Work Unit.

## Facility Development

1. Kettle Moraine Springs Salmon and Trout Hatchery.

Conversion of the east side field pond into concrete raceways for coho salmon production was completed in FY83 and FY84 at a total cost of \$56,561.71 from an allotment of \$50,606.04. Renovation of the central water supply collection system was completed in FY84 at a total cost of \$32,155.00 from an allotment of \$35,700.00. Development of the west side water supply for use in the coho salmon raceways was completed in FY83 at a total allotted cost of \$26,626.09. Egg hatching tanks for the salmon and wild trout hatchery were purchased in FY84 for \$2,930.40 from an allotment of \$3,000.00. Production of 200,000 to 300,000 coho salmon is expected from these improvements.

# Operations (Activities)

l. Lake Michigan Salmonid Creel Census.

Costs for running the annual creel census on Lake Michigan and its tributary streams were \$15,241.60 in FY83 and \$30,972.45 in FY84. An additional survey of Lake Michigan harbors, boat launch sites, piers, and

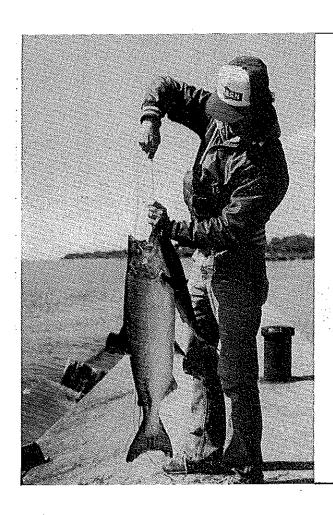


Figure 5. Assessment of angler harvest of trout and salmon from Lakes Michigan and Superior will allow more efficient management of the fishery.

shore sites in FY83 required an expenditure of \$10,465.72. Allotments for the three activities were \$20,550.00, \$35,365.00, and \$14,350.00, respectively. Coordination of the creel census, annual report preparation, and field census activities from Sheboygan County south are included in these expenditures. The creel census provides estimates of sport fishery catch and effort in Lake Michigan for use in overall fishery management. Sport fishers annually spend over 4 million hours harvesting about 700,000 trout and salmon from Lake Michigan in Wisconsin. These harvest figures are essential in improving stocking methods, changing regulations, and planning future management activities.

## 2. Trout Stocking Costs.

Transportation costs for distribution of trout and salmon to Lake Michigan from neighboring states were \$0 in FY83 for 25,000 brown and 25,000 rainbow trout from Minnesota and \$1,715.25 in FY84 for 60,000 rainbow trout from the USFWS hatchery at Genoa from \$2,000.00 and \$2,200.00 allotments, respectively. These fish are surpluses within their respective hatcheries of origin and are used to make up shortfalls in Wisconsin's annual hatchery production.

# 3. Salmonid Collection for PCB Analysis.

Costs of collecting trout and salmon for routine contaminant monitoring were \$0 in FY83 and \$888.36 in FY84 from \$1,210.00 and \$1,500.00 allotments, respectively. Project expansion is expected in FY85 as sample sizes will be increased in response to the FDA action on PCB levels in

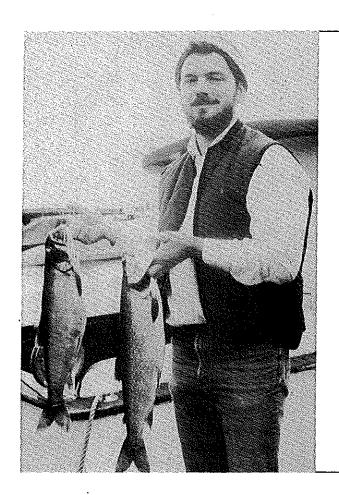


Figure 6. Evaluations of lake trout in Lake Michigan are aimed at eventual reintroduction of self-reproducing populations.

fish. Future monitoring will expand to better define patterns of contaminant distribution along Lake Michigan, through the season, among different species, and within species by size.

4. Kettle Moraine Springs Salmon and Trout Hatchery Operations.

Basic program services at the hatchery including limited term employee salaries, materials, production costs, fish food, system maintenance, and supplies totaled \$34,983.54 in FY83 and \$55,190.41 in FY84 out of \$33,500.00 and \$58,768.42 allotments. Nearly all of the hatchery production is used annually for Lake Michigan stocking. Also included were costs for electricity at the coho and chnook salmon imprinting pond at Kenosha and for acquiring Skamania strain steelhead brood stock from the state of Indiana.

5. Stock Lake Trout and Evaluate.

Fall spawning assessment expenditures in FY84 were \$26,064.42 from an allotment of \$34,300.00. Project activities included equipment purchases, limited-term employee salaries, and commercial contract netting. Summer population assessments using the R/V Barney Devine are tentatively planned for FY85. Preliminary results indicate that lake trout are homing to traditional inshore and deepwater reefs in southern Lake Michigan during the spawning season. There are currently 9 to 11 age classes contributing to the inshore spawning population. Multiple strains of lake trout are planned for future stocking in order to improve the genetic structure of the populations. Monitoring of commercial fishers indicates that the ongoing voluntary changeover to low-profile gill nets has significatly reduced incidental mortality of lake trout in perch nets.

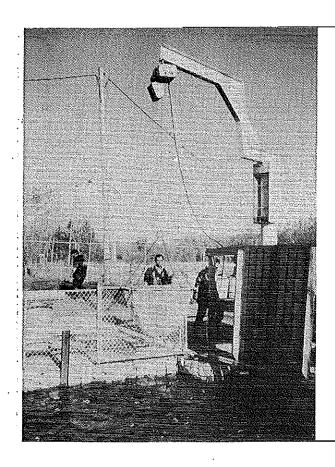


Figure 1. The Strawberry Creek chinook salmon weir and rearing pond was completely renovated, greatly facilitating egg collection and smolt release at the pond for Lake Michigan.

6. Coho Salmon Brood Stock Selection.

Spawn-collecting activities produced 90,000 eggs in FY83 and 70,000 eggs in FY84. Also, the environmental assessment for the proposed coho salmon spawning facility development will be completed in early FY85. The facility will be constructed with matching allotments of \$110,000.00 from Federal Anadromous Fish Conservation Act and Wisconsin Great Lakes Trout and Salmon Stamp Funds. Total expenditures in FY84 were \$287.11 from an allotment of \$4,300.00. The spawning facility will be developed in order to allow for selection of earlier running coho than are available from the state of Michigan. It is also hoped that this egg source will remain disease-free, in contrast to the disease-plagued Michigan coho currently being used.

#### LAKE MICHIGAN DISTRICT

Permanent employee salary expenditures in the District were \$16,711.61 in FY84 (0.5 position) from an allotment of \$8,100.00. All project activities by permanent employees occurred within the Lake Michigan Work Unit. None were allotted or charged in FY83.

## Facility Development

1. Strawberry Creek Salmon Rearing and Weir Pond Renovation.

The chinook salmon holding pond was redredged and banks stabilized in FY83 and the water control structure was installed in FY84. The well was also drilled in FY84, but failed to yield expected volume. A new well will be drilled in FY85. Spawn collecting facilities were completely rebuilt in



Figure 8. Steel-head trout are being evaluated in the Oconto. River in conjunction with the development of a spawn collecting facility and smolt release pond.

FY84 and provided with electricity in time for the fall spawning run. A concrete block storage building was also largely completed in FY84. Total expenditures in FY83 and FY84 were \$45,311.34 and \$44,439.17 from \$61,864.18 and \$60,402.84 allotments. This facility annually produces about 7 million chinook salmon eggs for Wisconsin's entire production source, as well as providing eggs to other states and the United States Fish and Wildlife Service. These eggs are in high demand because of their disease-free classification.

2. Manitowoc Salmon Rearing Pond Renovation.

Renovation activities at the Manitowoc chinook salmon rearing pond began late in FY84. Early expenses totalled \$2,205.23 from an allotment of \$10,000.00. Improvement of the pond outlet will facilitate movement of 250,000 salmon annually imprinted at the pond into the Manitowoc River.

Oconto River Trout Fishery Development.

Oconto River facility development and operations activities in FY84 were limited to minor expenses totaling \$220.28 from allotments totaling \$11,665.00. Another \$8,135.00 were allotted from the federal Anadromous Fish Conservation Act for the facility development. Ultimately, the facility development will include trapping, holding, and spawn-collecting facilities for Skamania strain steelhead and operations will include strain evaluations and fishery surveys that will be used for writing a fish management plan for the river. This summer-run steelhead is ideally suited to the warmer waters characteristic of Green Bay and southern Lake Michigan.

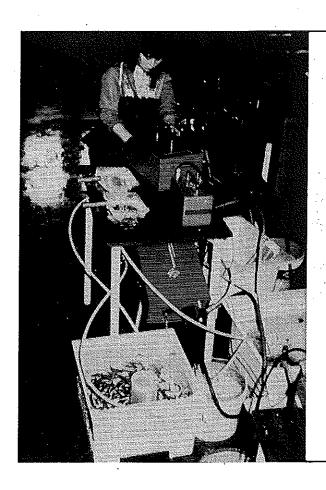


Figure 9. Coded wire-tagging equipment was purchased and used to evaluate chinook salmon behavior in Lake Michigan; future evaluations of other species are planned using this equipment.

# Operations (Activities)

#### Salmon Pond Rearing.

Operational expenses associated with chinook salmon imprinting ponds at Kewaunee, Two Rivers, Manitowoc, and Strawberry Creek and the Strawberry Creek spawning facilities totaled \$2,477.26 in FY83 and \$15,770.78 in FY84. Allotments for the two years were \$6,100.00 and \$17,200.00, respectively. Activities included pond preparation, fingerling rearing, egg taking, pond guarding, and adult monitoring.

2. Wild Rose Hatchery Great Lakes Operations.

Perforated raceways screens to increase Great Lakes coldwater rearing capacity were purchased in FY83 for \$1,141.60 from a \$2,000.00 allotment. Limited term employee salaries for Great Lakes coldwater production were \$3,407.90 and \$3,233.85 in FY83 and FY84, out of \$7,046.00 and \$8,772.00 allotments.

Chinook Salmon Stocking Evaluation.

Stocking of 20,000 coded wire-tagged chinook salmon at Marinette, Strawberry Creek, Sheboygan, and Racine was completed in 1982, 1983, and 1984. An additional 50,000 were stocked at Gill's Rock in 1984. There were approximately 80 tag recoveries in 1983, and 130 tag recoveries in 1984. Expenditures totaled \$244.06 from a \$7,900.00 allotment in FY83 and \$10,195.57 from a \$12,500.00 allotment in FY84. This project will assess movement patterns and age/growth of stocked chinook salmon to better manage and allocate the stocking effort along Lake Michigan.

4. Lake Michigan Salmonid Creel Census.

Costs for running the annual creel census on Lake Michigan and its tributary streams were \$9,806.65 in FY83 and \$35,821.62 in FY84 from allotments of \$11,550.00 and \$35,100.00, respectively. Coordination of field census activities from Manitowoc County north are included in these expenditures. Data collected are combined with those from the southeast District to provide the complete estimate of sport fishery harvest in Lake Michigan.

5. Stock Brook Trout and Evaluate

Stocking and evaluation expenditures for 24,411 wild Nipigon and 20,256 domestic brook trout in spring 1984 were \$1,895.14 from a \$8,420.00 allotment. There were no expenses charged in FY83 against a \$1,000.00 allotment, through 5,000 wild Nipigon brook trout were stocked. All fish were planted at Bailey's Harbor and were marked with unique fin clips to allow future evaluation of catch, survival, growth, movement, and distribution. Nipigon brook trout returned by anglers in 1984 from the first planting were 17 to 19 inches long.

Stock Lake Trout and Evaluate.

Summer population assessments and fall spawning assessments in FY84 required \$14,447.56 expenditures from an allotment of \$11,500.00. A contracted pound net set in the spring of 84 netted 8,400 lake trout, all of which were tagged and released. Cost of the contracted set was \$22,721.34 from allotments totalling \$26,500.00, of which the salmon stamp provided \$3,837.13 from a \$3,700.00 allotment. The remaining costs were provided by Federal Coastal Zone Management funds. This project provides data necessary to the lake trout management program that will ultimately seek to re-establish naturally reproducing populations in Lake Michigan.

7. Stock Splake and Evaluate.

Stocking costs of 20,000 fingerlings in September, 1983, and 20,000 yearlings in January, 1984, were \$510.18 from an allotment of \$6,300.00. These plantings were of F1 crosses between Gull Island Shoal wild, female lake trout and St. Croix Hatchery domestic, male brook trout parents. After 1 year in the lake, these fish have grown from about 6 inches to about 15 inches long.

8. Evaluate Salmonid Mortality in Alewife Commercial Trawls.

Monitoring of commercial alewife trawls for mortality of salmonids required \$3,908.48 from an \$8,150.00 allotment in FY84. Early results indicate that while some salmonids are incidentally caught, most are returned alive. Tagging studies will aim to quantify latent mortality from this incidental capture. Alewife harvest is largely controlled by market demand at about 20 million pounds annually, but increased incidence of chubs and smelt in the catch indicates that population shifts in the forage base may be occurring.

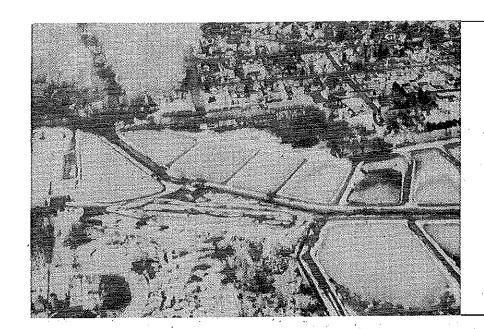


Figure 10. Improvements at Lake
Mills salmon
hatchery will improve production
of coho salmon
for stocking in
Lake Michigan.

#### SOUTHERN DISTRICT

Permanent employee salary and fringe benefit expenses in the District were all incurred in Lake Mills hatchery operations (1 position). Total expenses in FY83 and FY84 were \$4,652.32 and \$20,173.12 out of \$4,700.00 and \$20,200.00 allotments.

## Facility Development

1. Nevin Trout Hatchery Renovation.

Developments in FY83 and FY84 included improvement of the water lines to the lower earthen pond, remodeling and upgrading pond #18 into two smaller ponds, and preliminary activities attendant to dredging the effluent settling base. Additional activities and progress include drilling a well to provide 300-400 gallons per minute to the spiral raceway, burying wiring to the lower pond, and moving the entrance fence to allow easier hatchery truck access. Total expenditures were \$8,896.01 in FY83 and \$32,515.17 in FY84, from allotments of \$42,000.00 and \$48,291.99, respectively. These hatchery improvements will enhance production of brook, brown, and/or rainbow trout for Lake Michigan stocking.

2. Lake Mills Trout Hatchery Development.

Work completed in FY84 included constructing and installing degasers, replacing and rerouting the outdoor raceway water supply, and replacing both existing pumps with more efficient units. These developments were anticipated to increase coho salmon production for Lake Michigan from 150,000 to 300,000 fish. Total costs were \$20,663.60 from an allotment of \$10,000.00.

## Operations (Activities)

1. Nevin Trout Hatchery Operations

There were no operational expenses at the hatchery in FY84 charged against a \$3,800.00 allotment.

2. Lake Mills Salmon Hatchery Operations.

Operational expenses for rearing coho salmon at the hatchery in FY83 were \$1,194.39, and in FY84 were \$38,508.62. Allotments were \$12,000.00 and \$37,624.00, respectively.

#### NORTH CENTRAL DISTRICT

# Facility Development

1. Langlade Trout Rearing Station Renovation.

Early costs associated with the construction of the new ponds were \$448.00 from the \$39,800.00 allotment in FY84. Completion of this phase of the renovation is anticipated in FY85 and will enhance production of brook and/or brown trout for stocking in Lake Michigan.

Thunder River Trout Rearing Station Renovation.

Renovation activities begun in FY84 included reconstruction of rearing pond banks, installation of subsurface building drains, and installation of a pipe line from the rearing facilities to the pollution control ponds. Total costs in FY84 were \$1,610.66 of an \$8,815.00 allotment. These improvements will enhance production of brown trout for Lake Michigan stocking.

3. Lakewood Trout Hatchery Renovation.

Early costs associated with the dredging of the effluent settling basin and renovation and enlargement of the rearing ponds were \$235.77 from the allotment of \$14,300.00 in FY84. Production of brook, brown, and/or rainbow trout for stocking on Lake Michigan will be enhanced by these hatchery improvements.

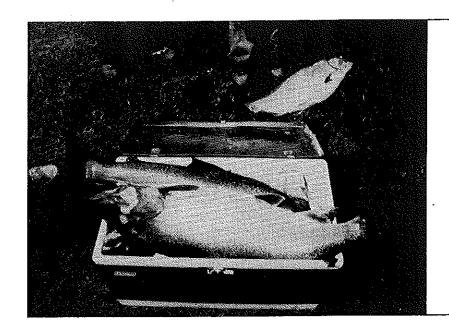


Figure 11. Hatchery developments and stocking evaluations funded by salmon stamp revenues will help to ensure that fishing on Wisconsin's Great Lakes remains the best in the world!

# Operations (Activities)

1. Crystal Springs Trout Rearing Station Maintenance.

Basic program operational expenses in FY83 were \$28,083.08 from an allotment of \$30,006.00. Costs were associated with the provisional rearing of 248,540 coho salmon stocked in April, 1983, at Milwaukee, Port Washington, Racine, and Sheboygan.

2. Thunder River Trout Rearing Station Operations.

Operational expenses for brown trout rearing in FY83 were \$857.08 from an allotment of \$6,100.00. There were no expenses in FY84 from a \$6,800.00 allotment.

3. Langlade Trout Rearing Station Operations.

Operational expenses in FY83 were \$16.00 from an allotment of \$4,994.00.

#### BUREAU OF FISH MANAGEMENT

## Operations (Activities)

1. Salmon Stamp Administration.

Administrative activities in FY83 and FY84 included stocking data tabulation for both general distribution and to the Great Lakes Fishery Commission, stocking data computer program development, and recomputation of creel census data using the updated program. Also, the micro-tagging gun for numerous projects in Lakes Superior and Michigan was purchased in FY83 and the salary of the interim Great Lakes Sport Fishery Specialist was provided in FY84. Total costs in FY83 were \$44,038.60 and in FY84 were \$24,068.64 from \$45,950.00 and \$16,749.60 allotments.

2. Salmon and Trout Contaminant Analysis.

Costs of the contaminant monitoring program for Lakes Superior and Michigan were \$24,014.70 in FY83 and \$17,200.00 in FY84 from \$24,000.00 and \$20,000.00 allotments. This program will be expanded in FY85 to better define patterns of contaminant distribution along Lake Michigan through the year for all species and sizes of trout and salmon.

3. Lake Michigan Salmonid Stocking Rationale.

Development costs for the computer program, documentation, and narrative description of the allocation procedure for Lake Michigan salmonids totaled \$6,591.30 in FY84 from a \$7,650.00 allotment. The program utilizes biological and sociological information and will be continually refined and used as a tool for stocking recommendations.

4. Chinook Salmon Sterilization Feasibility Study.

Contract costs for studies to determine the feasibility of sterilizing chinook salmon with methyl testosterone were \$17,741.00 from a \$20,655.00 allotment in FY84. These studies were conducted to develop the techniques for use in the operational project planned for the Lake Michigan District in FY86.

Developmental and operational projects utilizing revenues from the sale of Great Lakes Trout and Salmon stamps provided substantial enhancement and improvement to the management of Wisconsin's waters of Lakes Superior and Michigan during the first two program years. Both production and knowledge of trout and salmon species benefited greatly from the increased funds provided by this program. Projects planned for the years ahead will further build Wisconsin's production capability and species knowledge, assuring that fishing on the Great Lakes will continue to be the best in the world!

#### Companion report:

Krueger, Charles C. 1983. Expenditure plan for Great Lakes salmon and trout stamp revenues, 1983-88. Administrative Report No. 18, Fish Management Bureau, Department of Natural Resources, Madison, WI 21 pp.

TABLE 1. Allotments and expenditures of Great Lakes Salmon and Trout Stamp revenues for facility developments and program operations in Wisconsin, 1983-84.

District/Type*	1983		1984	
	Allotments	Expenditures	Allotments	Expenditures
Northwest developments operations total	12,575.41 36,165.00 48,740.41	2,575.41 25,129.51 27,704.92	46,300.00 151,750.00 198,050.00	19,379.86 113,859.14 133,239.00
Lake Michigan developments operations total	61,864.18 35,596.00 97,460.18	45,311.34 16,724.51 62,035.85	72,967.84 128,842.00 201,809.84	44,439.17 106,552.20 150,991.37
Southeast developments operations total	112,932.13 75,173.00 188,105.13	78,012.13 64,253.86 142,265.99	37,920.00 151,433.42 189,353.42	39,973.07 141,816.56 181,789.63
Southern developments operations total	42,000.00 16,700.00 58,700.00	8,896.01 5,846.71 14,742.72	58,291.99 61,624.00 119,915.99	53,178.77 58,681.74 111,860.51
lorth Central developments operations total	41,100.00 41,100.00	28,956.16 28,956.16	62,915.00 6,800.00 69,715.00	2,294.43 2,294.43
Bureau-operations	69,950.00	68,052.30	65,054.60	65,600.94
ringe benefits	19,700.00	12,212.97	55,600.00	54,860.28
rand Total	523,755.72	355,971.91	899,498.85	700,636.16
levenues	930,611.65 <sup>2</sup>		847,283,35	
alance-end of FY	574,639.74		765,307.95	

Expenditures in this report include encumbrances; thus unliquidated (unspent) encumbrances at the end of one fiscal year are added to the ending cash balance of that year to arrive at the beginning cash balance of the next fiscal year. This amount was \$44,021.02 in FY83 and \$69,070.34 in FY84, resulting in a beginning cash balance of \$618,660.76 in FY84 and \$834,378.29 in FY85.

Includes \$160,213.30 in FY82 (there were no expenditures) and \$770,398.35 in FY83.